

7                         external network interface circuits coupled to said host bus for interfacing  
8                         said host computer to one or more networks external to said customer premises  
9                         including at least a DOCSIS compatible cable modem for bidirectional digital data  
10                        communication over a hybrid fiber coaxial cable network, and one or more video  
11                        network interface circuits functioning to receive analog and/or digital video  
12                        signals delivered over a hybrid fiber coaxial cable network or via satellite or  
13                        terrestrial and deliver digital video data compressed using MPEG compression; and  
14                        wherein said host computer is programmed to implement an IP  
15                        packetization process to receive said compressed digital video data from said one  
16                        or more video external network interface circuits and packetize said compressed  
17                        digital video data into IP packets addressed to the device and/or process which  
18                        requested said digital video data and which is coupled to said gateway by one or  
19                        more of said local area networks or busses, and said host computer being further  
20                        programmed with a routing process to receive said IP packets from said IP  
21                        packetization process and to receive IP packets from said DOCSIS compatible  
22                        cable modem and automatically to all routing, encapsulation and protocol  
23                        conversion necessary to deliver said IP packets to a device and/or process in  
24                        execution on a device coupled to said gateway apparatus via one of said local  
25                        area network interfaces or bus interfaces and identified by address information in  
26                        said IP packets, and to receive data from a device and/or process in execution on  
27                        a device coupled to said gateway apparatus via one of said local area network  
28                        interfaces or bus interfaces and do any and all deencapsulation, encapsulation,  
29                        protocol conversion and routing necessary for each packet to be automatically  
30                        delivered to an appropriate one or more of said external network interfaces  
31                        coupled to a device and/or process to which each packet is addressed for

32 upstream delivery via an appropriate medium of transmission to whatever device  
33 and/or process to which said data is addressed, and said host computer  
34 programmed with a management and control process for receiving requests for  
35 data from a device and/or process coupled to one or more of said local area  
36 network interfaces or said bus interfaces, and sending digital control data to one  
37 or more of said external network interface circuits to control them to obtain said  
38 requested data from a source coupled to said gateway via one or more of said  
39 external network interfaces.

1                   2. [new--formerly claim 18 of the parent application] A gateway apparatus  
2 comprising:

3 a host computer having a host bus and controlled by at least a  
4 management and control process;

5 one or more network interface means for coupling said host computer to  
6 one or more local area networks and/or one or more buses that carry upstream  
7 and downstream data between said gateway and one or more devices located at  
8 a customer premises;

9 external network receiver interface means coupled to said host bus for  
10 interfacing said host computer to one or more networks external to said customer  
11 premises, said external network interface means comprising a DOCSIS cable  
12 modem means for receiving downstream broadband data in the form of IP packets  
13 encapsulated in MPEG packets and outputting IP packets, and for receiving  
14 upstream data from one or more devices coupled to one or more of said network  
15 interfaces and transmitting said data on a DOCSIS upstream on an external  
16 network comprised of a hybrid fiber coaxial cable system, and said external

1 7 network interface means further comprising one or more video network interface  
1 8 means functioning for receiving analog and/or digital video signals delivered over  
1 9 a hybrid fiber coaxial cable network or via satellite or via terrestrial and for  
2 0 delivering from said received video signals digital video data compressed using  
2 1 MPEG compression;;

2 2 an IP packetization means which may be part of said host computer and  
2 3 which is coupled to said host bus, for packetizing compressed digital data  
2 4 received from said said one or more video network interface means into internet  
2 5 protocol packets (hereafter IP packets);

2 6 a routing means which may be part of said host computer and coupled to  
2 7 said host bus and having one or more outputs coupled to said one or more  
2 8 network interface means and coupled to receive said IP packets from said IP  
2 9 packetization means and coupled to receive IP packets from said DOCSIS cable  
3 0 modem for routing said IP packets and delivering each said IP packets to the  
3 1 appropriate network interface means for delivery to the device which ordered  
3 2 data in said IP packet, and for receiving upstream data from devices and/or  
3 3 processes coupled to said one or more local area networks or busses and  
3 4 routing said data to the appropriate external network interface means for  
3 5 upstream transmission.

1

1 3. [new--formerly claim 34 of the parent case] A gateway apparatus comprising:  
2 a host bus;  
3 a plurality of expansion connectors electrically coupled to said host bus;  
4 one or more expansion modules coupled to said host bus through one or

5 more of said expansion connectors, each expansion module including the  
6 appropriate circuitry to bidirectionally interface with an external network medium  
7 comprised of either a hybrid fiber coaxial cable of a CATV system, a digital  
8 subscriber line local loop, an analog plain old telephone service line or a satellite  
9 dish;

10 one or more network interface adapters for coupling said gateway to one  
11 or more local area networks or busses which convey digital data to one or more  
12 items of customer premises equipment; transmitted from said one or more items of  
13 customer premises equipment to said gateway via one or more of said local area  
14 networks or buses for data or video or audio programs and to react thereto by  
15 appropriately controlling said one or more expansion modules to retrieve the  
16 requested data or video or audio program, and programmed to perform an IP  
17 packetization process to receive downstream digital data from one or more of  
18 said expansion modules which is not already in IP packet form and data from said  
19 management and control process and encapsulate said data into internet protocol  
20 packets addressed to the customer premises equipment and one or more  
21 processes running on customer premises equipment which requested said data,  
22 and said host computer further programmed to perform a routing process to do all  
23 packetization, protocol conversion and routing functions necessary to route  
24 packets between any of said expansion modules and any of said one or more  
25 local area networks and/or busses.

1 4. [new--formerly claim 36 of the parent case] A process carried out in a  
2 gateway, comprising:

3 (1) receiving a DOCSIS downstream comprised of MPEG packets

4 encapsulating IP packets with the data of said MPEG packets modulated onto a  
5 downstream carrier and recovering and outputting said IP packets using a  
6 DOCSIS cable modem;

7 (2) using a digital video tuner to receive downstream digital video  
8 transmissions in the form of an MPEG transport stream modulated onto a radio  
9 frequency carrier and demodulating and transport demultiplexing said MPEG  
10 transport stream to extract MPEG packets encoding audio and video components  
11 of a desired video program;

12 (3) packetizing said MPEG packets encoding audio and video components  
13 of a desired video program into IP packets;

14 (4) routing said IP packets from said packetizing step and IP packets  
15 received from said DOCSIS cable modem to an appropriate network interface; and

16 (5) performing the appropriate protocol conversions to transmit said IP  
17 packets to the devices to which they are addressed over a local area network or  
18 bus.

1 5. [new--formerly claim 41 of the parent case] An apparatus comprising:

2 a DOCSIS compatible cable modem for recovering digital data encoded in a  
3 DOCSIS downstream signal transmitted on a cable television system hybrid fiber  
4 coax medium (hereafter HFC) and for providing said recovered data at an output  
5 for use by a computer or other digital device coupled to said cable modem, and  
6 for transmitting upstream data from said computer or other digital device on a  
7 DOCSIS upstream transmitted on said HFC;

8 a tuner for tuning in a radio frequency carrier signal carrying a video  
9 signal;

1 0                   first means coupled to said tuner for recovering digital data encoding a  
1 1                   video program in said video signal, said digital data being compressed for  
1 2                   transmission over a data path;  
1 3                   an adapter circuit comprising:  
1 4                   an decoder for decompressing said compressed digital data to  
1 5                   generate uncompressed data encoding audio and video signals of said  
1 6                   video program;  
1 7                   an audio processor for converting said uncompressed digital data  
1 8                   encoding said audio signal into an analog audio signal;  
1 9                   video signal generation means for converting said uncompressed  
2 0                   digital data encoding a video signal into an NTSC, PAL, SECAM or  
2 1                   composite format video signal;  
2 2                   means for conveying said audio and video signals to an input or  
2 3                   inputs of a television set in a proper format for viewing and listening to  
2 4                   said video program;  
2 5                   first control means for controlling said cable modem, said tuner and said  
2 6                   first means;  
2 7

PATENT

28           second control means for controlling said adapter; and  
29           a data path coupling said first means to said adapter.

Respectfully submitted,



Dated: December 8, 2003

Ronald Craig Fish  
Reg. No. 28,843  
Tel 408 778 3624  
FAX 408 776 0426

I hereby certify that all of the above identified correspondence is being deposited with the United States Postal Service as Express Mail in an envelope addressed to:

**Mail Stop Patent Application**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Va. 22313-1450 on December 8, 2003  
Express Mail Receipt Number  
*EV 104612023 US*

Date: December 8, 2003



Ronald Craig Fish, President  
Reg. No. 28,843  
Ronald Craig Fish, a Law Corporation